



Standard Operating Procedure – EMS-0100.011 Name: Environmental Management System Audit	Corresponding Requirements: ISO Standard: 4.5.4 NBP Element: 16 EMS Manual 4.5.4
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Environmental Management System Audit Standard Operating Procedure

1.0 Purpose

1.1 This procedure outlines the process to be used to:

- Conduct periodic environmental management system (EMS) audits to determine if the EMS conforms to ISO 14001 Standards and National Biosolids Partnership (NBP) Elements, if applicable, and that they have been properly implemented and maintained
- Inform management of the results of the audits.

2.0 Definitions

2.1 Finding of Non-conformance (referred to in text as “finding” or “non-conformance”): Any thing that is in direct disagreement with an ISO 14001 standard, the City of Gastonia’s Environmental Policy, an NBP EMS requirement or any of it’s standard operating procedures or instructions.

3.0 Associated Reference Material

- 3.1 ISO 14001 Standard
- 3.2 National Biosolids Partnership Biosolids EMS Guidance Manual (if applicable)
- 3.3 NBP EMS Program Third Party Verification Auditor Guidance (if applicable)
- 3.4 Internal EMS Audit Report EMS-0101-011A
- 3.5 Internal EMS Audit Plan Worksheet EMS-0101-011B
- 3.6 Internal EMS Audit Schedule EMS-0102.011D
- 3.7 Internal EMS Audit Checklist EMS-0101.011E
- 3.8 Corrective/Preventative Action Report Form EMS-0101.004

4.0 Procedure

4.1 The EMS Coordinator shall ensure that periodic EMS audits are conducted to verify that the system is working as planned and is facilitating achievement of the environmental objectives and targets.

4.2 Schedule:

4.2.1 The EMS audits will be completed in accordance with the *Audit Schedule* EMS-0102.011D.

4.2.2 The *Internal EMS Audit Checklist* EMS-0101.011E may be used to track each stage of an audit.

4.2.3 Each division of the Public Works and Utility Department will be audited by section unless the EMS Coordinator determines that some sections may be combined. Each section will be audited at a minimum of once every year .

4.3 Auditors:

4.3.1 The EMS Audit Team is composed of the EMS Coordinator, or designee and representatives from various areas of the Public Works and Utilities Department.

4.3.2 At least two members of the audit team will conduct each audit.

4.3.3 All staff members shall participate in audits, upon request by auditors and/or management, when their respective area is being audited.

4.3.4 No auditor shall conduct an audit of his/her own working area.

4.3.5 All internal EMS auditors must have either received training from an outside EMS auditing training course; or have been trained on the *EMS Auditing* procedure, *National Biosolids Partnership (NBP) Elements*, if applicable, and *ISO 14001 Standard*, observed at least one internal audit and audited under the guidance of a previously qualified auditor. Prior to auditing without guidance, new auditors must have been deemed sufficiently trained and able to perform audits by the EMS Coordinator. Internal training and sufficiency of training must be documented on a Training Form EMS-0101.005A. Documentation of external training must be submitted to the EMS Coordinator and maintained in the EMS file.

4.4 Pre-audit Procedures:

4.4.1 Using the Audit Schedule, the Auditors will arrange a date for the audit with section supervisors and other effected personnel.

4.4.1.1 A pre-audit meeting for the auditors involved will be scheduled. During this pre-audit meeting, the auditors will devise a plan for performing the audit by: reviewing documentation for the area, ISO 14001 documentation, the *Internal EMS Audit Guidelines* in Attachment A, the *NBP EMS Third Party Verification Auditor Guidance* document, if applicable, and past audits. The *Internal EMS Audit Plan Worksheet* EMS-0101.011B should be used for this purpose.

4.4.2 After the Pre-audit meeting, the auditors will speak with the area supervisor to discuss topics that will be covered in the audit. At this time the supervisor can request the auditors to examine specific areas during their audit.

4.5 Site Audit:

4.5.1 Auditors will conduct the EMS audits using the Internal *EMS Audit Guidelines* in Attachment A as a guide. Conformance with each applicable section of the ISO 14001 Standard and/or NBP Element will be evaluated at least annually throughout the Department.

4.5.2 Auditors will record audit findings using the *Corrective/Preventative Action Report* Form EMS-0101.004 (C/PAR). The “Audit C/PAR” check box at the top of the form will be xed in by the Auditor.

4.5.3 Some potential non-conformances may need further investigation and/or clarification by the section supervisor, affected personnel or Lead Auditor before it is designated as a finding.

4.5.4 The audit program is designed to evaluate the EMS program, not to place blame on people. Therefore individuals’ names should not be used in the report; they should be referred to by position or other description.

4.5.5 During the close out meeting with the Area Supervisor, auditors will discuss audit findings, corrective actions, and any identified observations (opportunities for improvement). All findings corrected by the end of the on-site audit will be reported in

the final Audit report in the “Comments” section only. Each finding that cannot be corrected immediately will generate a C/PAR that will be issued prior to end of the audit. Auditors will fill in the “Description” section. Supervisors will be given hard copies of these C/PARs to add information to the “Root Cause” section and fill in the “Actions Taken/will be Taken” section of each C/PAR.

- 4.5.6 Auditors must review the completed “Actions Taken/will be Taken” section and determine the proposed actions are sufficient to bring the section back into conformance. Auditors will not submit the completed C/PAR to the Management Review Board until the “Actions Taken/will be Taken” section will bring the section back into conformance. Auditors will check the “Actions taken bring back into Conformance?” yes box at this time.
- 4.5.7 Auditors will also ensure that at least one of the Program boxes on the C/PAR form are checked and checked correctly (ISO 14001, NBP, etc.)
- 4.5.8 Observations (Opportunities for Improvement) may generate C/PARs, but not necessarily so. They will be noted in the “Opportunities for Improvement” section of the Audit report.
- 4.5.9 The C/PARs generated will be handled according to the *Corrective/Preventive Action Procedure* EMS-0100.004. Each Division or Department level C/PARs will be reviewed at the next appropriate C/PAR meeting.

4.6 Audit Report:

- 4.6.1 The audit team will complete an audit report using *EMS Internal Audit Report* EMS-0101.011A. Each audited section of the ISO 14001 Standard and NBP Elements will be evaluated in the report. Any C/PARs generated will be noted under the appropriate ISO 14001 Standard or NBP Element Findings section. Observations noted during the audit will also be incorporated into the audit report. Observations are weaknesses or opportunities for improvement in the program that are not in nonconformance with the ISO 14001 Standard or NBP Elements.
- 4.6.2 A member of the EMS audit team will ensure that the area supervisor receives a copy of the audit report prior to publication in the Management Review Board Report and be available to answer any questions he or she may have.

4.7 Records:

- 4.7.1 Auditors will ensure that signed reports are collected and filed in the EMS Coordinator's files.
- 4.7.2 The audit reports shall be made available to all employees on the computer system read-only drive.
- 4.7.3 Records shall be retained in accordance with the *EMS Document Control Matrix* EMS-0100.000A.
- 4.7.4 Each audit will be assigned a record ID number, which is the form number EMS-0101.011A plus an area identification code and the six digit date of the audit (example: EMS-0101.011A-LCLAB-071501).

5.0 Report to Management

- 5.1 The management representative will present the results of the EMS audits to management on a quarterly basis at the Management Review Board meetings.

6.0 Revision History

Revision		Reason for Revision	Description of Revision
Date	#		
2/25/03	5	C/PAR EMS-0116 C/PAR 94	<p>Added Revision History</p> <p>1.0 Added NBP</p> <p>2.0 Changed Associated Equipment to Definitions</p> <p>3.0 Added NBP Biosolids EMS Guidance Manual</p> <p>3.0 Internal EMS Audit Checklist EMS-0101.011E added</p> <p>3.0 NBP EMS Third Party Verification Auditor Guidance added</p> <p>4.2 Long Creek Laboratory deleted</p> <p>4.2 EMS-0101.011E may be used to track each audit</p> <p>4.3 External Training documentation section added</p> <p>4.4 Rearranged for better sequencing</p> <p>4.5 Changed a week to 5 business days</p> <p>Removed Supervisor Response Section</p>
11/16/03	6		<p>3.0 Updated Audit Schedule from form to chart</p> <p>4.2 Removed WWTD references</p> <p>4.5 Non-conformance reports changed to C/PARs</p> <p>Follow-up section removed</p> <p>Audit Report Modified</p> <p>Added Critical Control Points and Public Participation sections to the Internal EMS Audit Guidelines in Appendix A</p>
1/5/2004	7	CPAR 240	<p>EMS Audit Guidelines - Added a requirement to ensure that Performance measures are reviewed during internal audits.</p> <p>4.3.3 - Added a requirement for all staff members to participate in audits upon request.</p>
3/7/05	8	Expansion of EMS into other divisions	Added "if applicable" after NBP sections
1/22/07	9	Update	<p>Section 4.2.3 changed to have each section audited once per year. Added "throughout the Department" to the end of "Conformance with each applicable section of the ISO Standard will be evaluated at least annually" in 4.5.1.</p> <p>Changed 4.5.9 to read that each Division or Department level C/PAR will be reviewed at the next appropriate C/PAR meeting</p>

Attachment A Internal EMS Audit Guidelines

I. Environmental Policy

- A. Confirm that the policy is up-to-date and still appropriate to the nature and scale of current activities, products, and services.
- B. Determine that the policy is communicated to employees:
 - 1. New employees. Check new employee training to verify that it covers the environmental policy, and interview new employees to ensure that they understand the policy.
 - 2. Existing employees. Determine how the policy is discussed or communicated to existing employees. Interview randomly selected existing employees at several levels within the organization (including top management) to determine if they know of the policy's existence and general content.
 - 3. Review external communication request logs to determine that the policy has been made available to the public (at least when requested).
 - 4. Review the current objectives and targets to determine if they are consistent with the intent of the policy.

II. Environmental Aspects

- A. Determine whether or not the procedure for periodic review and analysis of the environmental aspects and significance is followed.
- B. Determine that the current set of significant environmental aspects and critical control points is reflected in the current objectives and targets.
- C. Determine that all significant changes (e.g. chemical use, process changes, activity/production level, and use of contractor, changes in neighbors) have been reviewed as part of the update process. Pick several changes and follow them through the review process to determine that they have been appropriately analyzed and addressed.

III. Critical Control Points (if applicable)

- A. Determine if the critical control points of the Biosolids management activities are consistent with those identified in the *National Manual of Good Practice* and other authoritative sources.
- B. Determine if potential or actual environmental impacts are identified at each critical control point
- C. Determine if the information on the critical control points is kept up to date.
- D. Determine if there are records that link each critical control point's potential environmental impacts with its operational controls.
- E. Determine if any operational changes that have affected the critical control point listing or their environmental impacts have been communicated to the NBP and assigned third-party auditor.

IV. Legal and Other Requirements

- A. Determine that the procedure for periodic review and analysis of legal and other requirements is followed.
- B. Determine that all significant changes (e.g. chemical use, process changes, activity/production level, and use of contractors, changes in neighbors) have been reviewed as part of the change management

process. Pick several examples and follow them through the update and review process to ensure that any changes in requirements are communicated and implemented.

- C. Determine that there is access to up to date copies of the relevant legal requirements and internal corporate requirements and external industry standards.
- D. Review the results of recent compliance audits to determine if they indicate any deficiencies in the legal requirements review (e.g. the personnel conducting the legal analysis are not qualified to conduct the review or not doing it in a timely manner).

V. Objectives and Targets/Environmental Management Program

- A. Determine that the current objectives and targets reflect the division’s current environmental aspects and the commitment to continual improvement and prevention of pollution.
- B. Determine that each objective and target has an appropriate environmental management program that includes:
 - 1. specific and measurable targets with assigned deadlines and designation of responsibility for achievement; and
 - 2. a description of how targets will be achieved
- C. Determine that progress towards achievement of objectives and targets is measured and evaluated on a periodic basis and the results have been reported to top management. For areas not meeting targets and objectives, determine that corrective actions have been initiated.

VI. Structure and Responsibility

- A. Review documented roles and responsibilities and ensure that the information has been kept current with respect to any reorganizations, departures, hiring, and/or new requirements.
- B. Pick a random sample of the documented roles and responsibilities and discuss these roles with the named parties to ensure that the responsible parties know these assignments.
- C. For known EMS-related staffing changes that have occurred since the last audit (e.g., new hires, promotions, new positions, etc...), ensure that the documented roles and responsibilities reflect the change.
- D. Review the responsibilities of the EMS Coordinator, including reporting to top management, and determine if these are being carried out. This process might involve interviews and review of reports to determine that issues are being fully communicated to top management.
- E. Determine that adequate human, financial, and technological resources are in place to enable achievement of EMS goals, including current objectives and targets and related environmental management programs. This might involve review of budget and staffing plans.

VII. Training, Awareness, and Competence

- A. Review the Training matrix and ensure that it has been kept current with respect to any reorganizations, departures, hiring, and/or new requirements.
- B. Select several procedures and determine whether the training has taken place. Check to see that the procedures have been implemented and that staff functioning in the various positions have been trained. Review documentation to determine that appropriate records have been developed and maintained.
- C. Review the new employee training process and interview employees who are new within the division. Determine if the training program has been effective in informing new employees of the environmental policy and their duties within the EMS.
- D. Review training requirements that apply to contractors. Interview selected contractors to determine that their training programs address appropriate requirements (e.g. EMS policy, NBP, safety, etc...) and have been implemented.

VIII. Communication Programs

Determine that the external communication procedure is followed. Using a sampling process, determine that documentation of the receipt and responses to external inquiries is maintained. Interview key personnel, who initially receive inquiries to determine how these inquiries are documented and, where appropriate, referred to other personnel. Review records of the receipt and response.

- B. Review internal communication programs and determine that they are being implemented. Interview selected staff and supervisors concerning the effectiveness of this program.
- C. Determine if NBP information is being provided to the public in a proactive but appropriate manner (if applicable)..

IX. Public Participation (if applicable)

- A. Determine if the views of interested parties have been considered when identifying environmental impacts and setting performance goals and objectives for the Biosolids program
- B. Determine that records of public participation activities are kept.
- C. Determine that opportunities exist for interested parties to express views and perspectives relative to Biosolids management activities

X. EMS Documentation

- A. Review the current EMS documentation and ensure it is up-to-date.

XI. Document Control

- A. Determine that the current document control program is followed. Select a few documents and check that they have been reviewed and, where appropriate, updated.
- B. Review a sample of official copies of controlled documents and ensure that:
 - 1. they are available to employees who need access to them;
 - 2. they have been appropriately update; and
 - 3. all obsolete copies have been removed or appropriately marked according to the established procedures.

XII. Operational Control

- A. Review the current operational procedures. Determine that these procedures are being followed using one or more of the following techniques:
 - 1. observation of the activity covered by the procedure (e.g. watching a sampling activity covered by the procedure take place);
 - 2. interview of key employees to establish whether they know and understand their duties under the procedure; and
 - 3. review of records developed as part of implementing the procedure.
- B. Ensure that the written procedures represent current practice. If there is a deviation between current practice and written procedures, include this as a finding.
- C. Review the current list of significant environmental aspects and critical control points (if applicable) to determine if current operational procedures are addressing all operations and activities associated with the significant environmental aspects and critical control points.

XIII. Emergency Preparedness and Response

- A. Review the current emergency identification, prevention (preventative maintenance, etc...), and mitigation program(s) (spill response and clean-up, etc...), including any drills or equipment maintenance programs. This review should include both regulatory-based and internal programs. Determine, through physical inspection, interviews, and checking of records, that these have been implemented and maintained. Determine if facility changes have been reviewed for their effect on these programs.
- B. Review the current emergency response plan(s), including any drills and equipment maintenance programs. Determine, through physical inspection, interviews, and checking of records that: the emergency response equipment is maintained, emergency response procedures are available, and personnel understand and are trained in their roles. Determine if facility changes have been reviewed for their effect on these programs.

XIV. Monitoring and Measurement

- A. Review the current monitoring and measurement programs, both regulatory and non-regulatory, and ensure that they are appropriately implemented. This will include review of written procedures and records, interview of key employees, and review of reports. It may also include inspection of equipment, where appropriate.
- B. Review procedures for measuring progress towards achieving established objectives and targets. This will include review of improvement plan summary (objectives and targets document) tasks for progress or completion.
- C. Review calibration programs and their implementation. This will include review of written procedures and records, interview of key employees, and physical inspection of equipment.
- D. Review the compliance audit program and determine if it reflects current regulatory requirements (i.e. any recent regulatory changes) and has been implemented in accordance with the schedule and requirements stated in the written compliance audit procedure
- E. Ensure that performance measures are established and performance is tracked.

XV. Nonconformance and Corrective and Preventative Action Program

- A. Determine that the corrective action procedure is implemented and followed.
- B. Review the methods for collecting and referring items to the formal corrective action program. Determine, through interviews and review of records, that these methods are operating effectively.
- C. Select a sample of identified nonconformances and track their progress through the corrective action program. Determine that items referred to the program are appropriately investigated and corrective actions determined and documented. This will typically involve interviews, review of documents, and occasionally, physical inspections. Determine that the program has an effective method of ensuring that corrective actions are implemented.
- D. Review any corrective action that required a change(s) in documented procedures, and verify that such change has been made to the controlled copy of the procedure and that personnel are following the revised procedure.

XVI. Records

- A. Determine that the record management procedure is implemented and followed.
- B. Use a sampling process to determine that records are appropriately developed and maintained. This will involve physical inspection of the records to determine that they are legible, complete, available, and traceable to the activity involved.
- C. Determine that new record-keeping requirements resulting from facility changes are appropriately implemented and maintained.
- D. Determine that the record retention procedure is maintained and followed. This will typically involve physical inspection of records and record destruction.

XVII. EMS Audit Program

- A. Review the EMS audit procedure and determine that the EMS audit program is conducted according to the procedure. Check that audits are conducted according to the established schedule and nonconformances are referred to the corrective action system.
- B. Verify that the results of the EMS audits are communicated to appropriate parties (i.e. top management, etc...)

XVIII. Biosolids Management Report (if applicable)

- A. Determine if the report is readily available to the public
- B. Review to assure NBP requirements are covered

XIX. Management Review

- A. Determine that the management review program has been appropriately implemented in accordance with the requirements of the management review procedure. Verify the following:
 - 1. the review meetings with appropriate personnel (i.e. top management) are occurring according to the stated schedule;
 - 2. the information provided to the top management accurately represents the performance of the EMS and NBP(if applicable);
 - 3. appropriate issues are discussed at review meetings (check meeting minutes and other records and conduct interviews with participants to verify this); and
 - 4. the results of management review are properly documented and maintained
 - 5. verify that performance measures are reported on, reviewed by the MRB, and corrective actions taken when necessary.

- B.** Verify that issues identified during management reviews have resulted in management consideration of potential changes to the policy, objectives, and other elements of the EMS and NBP.